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June 4, 1982

Mr. Richard D. Stonebraker, Deputy Chief
Hazardous Emergency Response Branch
Air and Hazardous Materials Division
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Subject: MAGNETOMETER SURVEY AND RESISTIVITY SOUNDINGS AT LEES LANE LANDFILL, LOUISVILLE, KENTUCKY
TDD # F4-8203-01B

Dear Mr. Stonebraker:

Region IV FIT personnel conducted a magnetometer survey and resistivity soundings at Lees Lane Landfill, Louisville, Kentucky, during the week of May 17-21, 1982. Magnetometer readings were taken over the entire 125-acre site at 50-foot intervals. Resistivity soundings were conducted at eight locations.

Figure 1 (sheets 1 and 2) shows the location of buried ferromagnetic metals on the site. In these areas the magnetometer readings were greater than 57,000 gammas. The offsite magnetometer readings were in the 56,000 gamma range.

The largest area of buried ferromagnetic metals is in the southern section of the landfill. Buried metal also underlies the toe of the levee in the southern section. Several leachate break-outs were observed in the southern and middle sections. These are indicated on Figure 1. A low topographic area (pit) was observed in the middle section. Strong organic odors were smelled in the immediate area surrounding this pit. The areas indicated as a result of the magnetometer survey correspond well with the areas of waste disposal as seen on the 1963 aerial photograph of the landfill.

The resistivity soundings as shown in Figure 2 were correlated with the existing subsurface data at the landfill. There is approximately 90 feet of alluvial deposits (silt, sand, and gravel) underlying the site. Within the alluvium three zones were picked as displaying high resistivity values. These are interpreted as permeable sand zones through which leachate may be moving. These zones (45, 60, and 80 feet deep) will be profiled in Phase II of the site investigation to determine the extent of ground-water contamination. Shale was interpreted at approximately 95 feet deep and there appears to be a 20-foot thick weathered rock zone overlying the solid shale bedrock.

The phase I investigation data will be very valuable in further evaluations of the wastes at the landfill. The Phase II data will enable the effective placement of ground-water monitoring wells.

The security and safety at Lees Lane Landfill continues to be a potential problem. During the site investigation numerous people crossed the landfill along the asphalt road. In addition, a majority of the gas vent wells were observed to be in need of repair and maintenance; caps were missing, PVC pipe was broken, and the well annulus in one well had caved-in from the surface.

Respectfully,

H. Dan Harman, Jr.

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Project Officer

James L. Templeton, Jr.

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FITL Region IV

HDH/JLT/lsr